LISTING OF THE CLAIMS

Claims 1, 4-8, 12, 13, 15, 16, 18, 19, and 21-25 are pending in the Application. Claim 1 is an independent claim and claims 4-8, 12, 13, 15, and 24 depend there from. Claim 16 is an independent claim and claims 17-19, 21-23, and 25 depend there from.

This listing of claims will replace all prior versions and listings of claims in the application.

1.   (Previously Presented) A method for classifying an audio signal, the method comprising:

receiving an audio signal to be classified;

dividing the audio signal at least into sub-bands compatible with speech and incompatible with speech;

calculating a ratio of the sub-bands;

comparing the ratio to a threshold value; and

classifying the audio signal based upon the comparison as either speech or music;

transforming the audio signal into frequency domain;

allocating a number of bits for each of a plurality of frequency components resulting from transforming the audio signal into the frequency domain based on the classification of either speech or music;

quantizing each of the plurality of frequency components resulting from transforming the audio signal into the frequency domain with the allocated number of bits based on the classification of either speech or music.

2-3.   (Cancelled)

4.   (Original) The method according to claim 1, wherein calculating a ratio of the sub-bands further comprises integrating the sub-band compatible with speech,

integrating the sub-band incompatible with speech, and calculating a ratio of the sub-bands.

5. (Original) The method according to claim 1, wherein classifying the audio signal based upon the comparison the ratio to the threshold value further comprises,

if the ratio is less than the threshold value, then the audio signal is classified as speech.

6. (Original) The method according to claim 1, wherein classifying the audio signal based upon the comparison of the ratio to the threshold value further comprises,

if the ratio is greater than the threshold value, then the audio signal is classified as music.

7. (Original) The method according to claim 1, wherein dividing the audio signal into sub-bands compatible with speech and incompatible with speech further comprises dividing the audio signal into a first frequency sub-band comprising frequencies below 4 KHz and a second frequency sub-band comprising frequencies above 4 KHz.

8. (Original) The method according to claim 1, wherein upon classifying the signal as one of speech and music, a classifying sub-band may be further divided and additional ratios calculated to provide more detailed information regarding an identity of a sound producer of the audio signal.

9-11. (Cancelled).

12. (Original) The method according to claim 1, wherein the threshold value used in the comparison is pre-determined and pre-set by a user.

13.　　(Original) The method according to claim 1, wherein the threshold value used in the comparison is determined through trial and error of a plurality of iterations in a comparing device.

14.　　(Cancelled)

15.　　(Original) The method according to claim 1, wherein the audio signal is one of an analog signal and a digital signal.

16.　　(Previously Presented) A system for classifying an audio signal, the system comprising:

an input for receiving an audio signal;

a mathematical processor for performing a plurality of mathematical functions on the audio signal;

a comparator for comparing a calculated ratio of sub-bands of energy of the audio signal to a threshold value; and

an output from the comparator indicating a classification of the audio signal as either music or speech;

a transformer for transforming the audio signal into frequency domain;

a quantizer for allocating a number of bits for each of a plurality of frequency components resulting from transforming the audio signal into the frequency domain based on the classification of either speech or music and quantizing each of the frequency components resulting from transforming the audio signal into the frequency domain with the allocated number of bits based on the classification of either speech or music.

17.　　(Cancelled)

18.　　(Original) The system according to claim 16, wherein the comparator may be programmed with the threshold value by a user.

4

19.   (Original) The system according to claim 16, wherein the comparator may determine the threshold value through a plurality of comparative iterations.

20.   (Cancelled)

21.   (Original) The system according to claim 16, wherein the comparator is adapted to classify the audio signal based upon the comparison the ratio to the threshold value wherein, if the ratio is less than the threshold value, then the audio signal is classified as speech.

22.   (Original) The system according to claim 16, wherein the comparator is adapted to classify the audio signal based upon the comparison of the ratio to the threshold value wherein, if the ratio is greater than the threshold value, then the audio signal is classified as music.

23.   (Original) The system according to claim 16, wherein upon classifying the signal as one of speech and music, a dominant classifying sub-band may be further divided to provide more detailed information regarding an identity of a producer of the audio signal.

24.   (Previously Presented) The method of claim 1, wherein allocating comprises:
            allocating a higher number of bits to quantize higher frequency components if the audio signal is classified as music than a number of bits allocated to quantize the higher frequency components if the audio signal is classified as speech; and
            allocating a higher number of bits to quantize lower frequency components if the audio signal is classified as speech than a number of bits allocated to quantize the law frequency components if the audio signal is classified as music.

25.   (Previously Presented) The system of claim 16, wherein allocating comprises:

allocating a higher number of bits to quantize higher frequency components if the audio signal is classified as music than a number of bits allocated to quantize the higher frequency components if the audio signal is classified as speech; and

allocating a higher number of bits to quantize lower frequency components if the audio signal is classified as speech than a number of bits allocated to quantize the law frequency components if the audio signal is classified as music.